



Certified Level 1 Validation Report, Part A: Validator Provided Details

Audit Information:

Water Supplier Name: Sunny Slope Water Co.

PWS ID: CA1910157

System Type: Potable

Audit Period: CY 2020

Utility Representation: Carrie Chan, Water Quality Representative

Validation Date: 8/2/2021

Call Time: 10:00

Sufficient Supporting Documents Provided: Yes

Validation Findings & Confirmation Statement:

Key Audit Metrics:

Data Validity Score: 66

Data Validity Band (Level): Band III (51 – 70)

ILI: 1.84

Real Loss: 26.91 (Gal/conn/day)

Apparent Loss: 13.27 (Gal/conn/day)

Non-revenue water as percent of cost of operating system: 6.2%

Certification Statement by Validator:

This water loss audit report has been Level 1 validated per the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34.

All recommendations on volume derivation and Data Validity Grades were incorporated into the water audit. ☒

If not, rejected recommendations are included here.

Validator Information:

Water Audit Validator: Justin Bailey, via Rubio Cañon Land and Water Association

Qualifications: Water Audit Validator Certificate issued by the CA-NV Section of the AWWA

Validator Provided



Certified Level 1 Validation Report, Part B: Utility Provided Details

Audit Information:

Water Supplier Name: Sunny Slope Water Co.
Water Supplier ID Number: CA1910157
Water Audit Period: CY 2020

Water Audit & Water Loss Improvement Steps:

- Transitioned away from Bi-Monthly billing in CY2020 – Customer meters now read monthly.
- Upcoming SCADA improvements will enable Well production volumes (VOS) to be tabulated via SCADA, in addition to the standard practice of manual field reads. This enhanced tracking will allow greater accuracy in the overall accounting of all VOS volumes
- Scheduled rate increase for 1/1/2020 deferred due to Covid Pandemic and now implemented as of 1/1/2021. Dedicated reservoir rehabilitation fund also initiated as of 1/2021.

Certification Statement by Utility Executive:

This water loss audit report meets the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34 and has been prepared in accordance with the method adopted by the American Water Works Association, as contained in their manual, *Water Audit and Loss Control Programs, Manual M36, Fourth Edition* and in the Free Water Audit Software version 5.

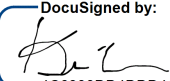
Executive Name (Print)

Ken Tcheng

Executive Position

V.P./GENERAL MANAGER

Signature

DocuSigned by:

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Date

8/4/2021

Utility Provided

Pre-Interview Notes	<p>Sunny Slope Water Co. was established in 1895 and currently provides service to over 6,300 services across roughly 160 acres of service area.</p> <p>5 ground water wells produce 100% of the source water required to meet the demands of the more than 30,000 Sunny Slope customers.</p> <p>All validation information and supporting documentation was provided in a detailed and prompt manner.</p>
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Audit Input	Confirmation of Input Derivation	Confirmation of DVG Assignment
Volume from Own Sources (VOS)	<p>Supply meter profile: (5) groundwater wells provided 100% of the source water during this Audit period.</p> <p>VOS Input Data Source: Meter registers are read daily and monthly. Production reports track cumulative production throughout the year.</p> <p>Comments: 100% of water entering the system was provided by these own sources. The meters for each production well are tested volumetrically either an annual or biannual basis. All (5) Wells were tested between 5/2019 & 3/2021.</p> <p>Confirmed input value: 3,624.706 AF</p>	<p>Percent of VOS metered: 100% metered</p> <p>Signal calibration frequency: Unknown</p> <p>Volumetric testing frequency: Annually is the objective. Operational factors have resulted in testing done at least every 2nd year.</p> <p>Volumetric testing method: Pitot tube w/ pressure differential and timed flow tests.</p> <p>Percent of VOS tested and/or calibrated: 100%</p> <p>Comments: Wells 11 and 12 were testing within the Audit year, CY20. Wells 9 and 13 were tested in 2019, and Well 8 was tested in March, 2021.</p> <p>Confirmed DVG: 6</p>
VOS Master Meter Error Adjustment	<p>Adjustment Basis: Annual volumetric testing</p> <p>Net Storage Change Included: Yes; Reservoir capacity change of -1.481 AF was calculated</p> <p>Comments: Sunny Slope has consistently conducted meter testing, and all VOS sources test at a very high level of accuracy, resulting in a narrow margin of -0.303 AF variance across all (5) meters</p> <p>Confirmed input value: -1.748 AF</p>	<p>Supply meter read frequency: Daily</p> <p>Supply meter read method: Manual Read only</p> <p>Frequency of data review: Monthly</p> <p>Storage level monitoring frequency: Constant – via SCADA</p> <p>Comments: Tested meter accuracy % is applied to each meters recorded monthly calculated volume to produce highly accurate actual volume produced – per meter. Net Reservoir LOSS was also tabulated to provide a more complete WS volume.</p> <p>Confirmed DVG: 5</p>

Audit Input	Confirmation of Input Derivation	Confirmation of DVG Assignment
<p>Water Imported (WI)</p>	<p>Import meter profile: Unknown</p> <p>WI Data Source: Unknown</p> <p>Comments: No water was imported through any connections during this audit period.</p> <p>Confirmed input value: 0.0 AF</p>	<p>Percent of WI metered: Unknown</p> <p>Signal calibration frequency: Unknown</p> <p>Volumetric testing frequency: Unknown</p> <p>Volumetric testing method: Unknown</p> <p>Percent of WI tested and/or calibrated: Unknown</p> <p>Comments: None</p> <p>Confirmed DVG: N/A</p>
<p>WI Master Meter Error Adjustment</p>	<p>Adjustment Basis: N/A</p> <p>Comments:</p> <p>Confirmed input value: N/A</p>	<p>Import meter read frequency:</p> <p>Import meter read method:</p> <p>Frequency of data review:</p> <p>Comments: Left blank as not applicable</p> <p>Confirmed DVG: N/A</p>
<p>Water Exported (WE)</p>	<p>Export meter profile: N/A</p> <p>WE Data Source: N/A</p> <p>Comments: N/A</p> <p>Confirmed input value: 0.0 AF</p>	<p>Percent of WE metered: N/A</p> <p>Signal calibration frequency: N/A</p> <p>Volumetric testing frequency: N/A</p> <p>Volumetric testing method: N/A</p> <p>Percent of WE tested and/or calibrated: N/A</p> <p>Comments: N/A</p> <p>Confirmed DVG: N/A</p>
<p>WE Master Meter Error Adjustment</p>	<p>Adjustment Basis: N/A</p> <p>Comments: Left blank for lack of test data</p> <p>Confirmed input value: N/A</p>	<p>Export meter read frequency: N/A</p> <p>Export meter read method: N/A</p> <p>Frequency of data review: N/A</p> <p>Comments: None</p> <p>Confirmed DVG: N/A</p>

Audit Input	Confirmation of Input Derivation	Confirmation of DVG Assignment
<p>Billed Metered Authorized Consumption (BMAC)</p>	<p>Customer Meters & Reads Profile: The customer base is comprised of a mix of service types; 92% Residential, and 8% Commercial, Institutional, & City / Fire service connections.</p> <p>Of 6,325 Active metered services, with >98.6% converted to AMR.</p> <ul style="list-style-type: none"> - Age profile: Weighted average of meters and install dates calculates an overall meter age at 8 years max (2013 replacement program initiated), and 5.8 years average (as bulk of meters were replaced in 2015/2016). - Reading system: Almost exclusively AMR metering and radio reading. Remaining standard meters are manually read and entered into billing software - Read frequency: Monthly <p>Billing Data Pro-rated? In some cases, yes. Sunny Slope does not estimate usage in all cases of 'dead' meters.</p> <p>Comments: Includes all metered water sales of 3,329.772 AF</p> <p>Confirmed input value: 3,329.772 AF</p>	<p>Percent of customers metered: 100%</p> <p>Small meter testing policy: None</p> <p>Number of small meters testing/year: 0</p> <p>Large meter testing policy: None</p> <p>Number of large meter tested/year: 0</p> <p>Meter replacement policy: Yes. Meter replacement includes pro-active replacement, failed meter replacement, and at the customer's request when more volume is desirable.</p> <p>Number of replacements/year: 38 total in CY 2020.</p> <p>7 were dead or questionable meters, 31 for customer upgrades</p> <p>Billing data auditing practice: Automated billing software w/ monthly in-house auditing and annual 3rd party auditing</p> <p>Comments: Meter testing only occurs under limited conditions; however, the quantity of the relatively young AMR meters increases overall meter accuracy reliability.</p> <p>Confirmed DVG: 5</p>
<p>Billed Unmetered Authorized Consumption (BUAC)</p>	<p>Billed Unmetered Profile: None Reported</p> <p>Input Derivation:</p> <p>Comments: No Estimated billing</p> <p>Confirmed input value: 0.0 AF</p>	<p>Policy for metering exemptions: Strict policy for approval and invoicing are in place.</p> <p>Comments:</p> <p>Confirmed DVG: N/A</p>
<p>Unbilled Metered Authorized Consumption (UMAC)</p>	<p>Unbilled Metered Profile: Backwash for LGAC system and water discharged from the Microvi Nitrate treatment system into sewer tracked for the LA County Sanitation District</p> <p>Input Derivation: Readings for sewer discharge meter are manually recorded daily and reviewed monthly</p> <p>Comments: CY 2020 had a total of 868,385 gallons discharged (or 2.665 acre-feet)</p> <p>Confirmed input value: 2.665 AF</p>	<p>Policy for billing exemptions: Strict policy for approval and invoicing are in place to restrict unbilled conditions.</p> <p>Comments: Tabulated monthly spreadsheet provided by Sunny Slope Staff. No unbilled customers and all volumes taken from reliable meters for backwash and sewer discharge</p> <p>Confirmed DVG: 10</p>

Audit Input	Confirmation of Input Derivation	Confirmation of DVG Assignment
<p>Unbilled Unmetered Authorized Consumption (UUAC)</p>	<p>Unbilled Unmetered Profile: System leaks, Operational flushing, and fire department use.</p> <p>Input Derivation if Estimated: Flushing volumes & Fire Dept. use are based on estimates – Leaks tracked by quantity, but only general size & duration of discharge</p> <p>Comments: Default of 0.25% x WS utilized due to reduced quantity and duration of operational discharges.</p> <p>Confirmed input value: 9.066</p>	<p>Default or Adjusted Default Applied: Default input utilized</p> <p>Completeness of Documentation: Volume based on estimates. There were 20 Service leaks and 23 small main leaks recorded during CY20.</p> <p>Comments: System main and service leaks constitute majority of UUAC, as flushing practices have been mostly eliminated due to conservation efforts.</p> <p>Confirmed DVG: 5</p>
<p>Unauthorized Consumption (UC)</p>	<p>Default Applied? Yes</p> <p>Input Derivation if Customized: Default input utilized</p> <p>Comments: All suspicious activities are investigated and active efforts are built into routine patrols to guard against UC.</p> <p>Confirmed input value: 9.066 AF</p>	<p>Instances and extent of UC documented: Occasional UC has been observed at hydrants, but is immediately curtailed by Sunny Slope Staff.</p> <p>Comments: Sunny Slope Water Co. has policies and practices in place to actively identify instances of UC. However, since known instances occur so infrequently, no auditable documentation has been put in place to track and query each instance.</p> <p>Confirmed DVG: 5</p>
<p>Customer Metering Inaccuracies (CMI)</p>	<p>Input Derivation: See BMAC activities for meter testing and replacement practices. Meter accuracy estimated on age of meters, and routine review of AMR data logs and consistency in metered consumption</p> <p>Comments: Weighted average of meters and install dates was used to calculate overall meter age at 8 years max (2013 replacement program initiated), and 5.8 years average (as bulk of meters were replaced in 2015/2016). Good record keeping and tracking is in place, and Computer Billing System identifies anomalies in monthly consumption – which are followed up with manual verification. Meter inaccuracy is estimated to have slightly increased over last year’s percentage as a matter of normal wear and tear.</p> <p>Confirmed input value: 76.706 (2.25%)</p>	<p>Characterization of meter testing: Currently, meter testing occurs only at the request of the customer</p> <p>Characterization of meter replacement: Minimal replacements in CY2020. Majority of system transitioned to AMR metering during 2013-2018 Replacement Program. Pro-active replacement does occur, although on a limited scale (<0.5%)</p> <p>Comments: The DVG grade will change in future years when more regular and proactive customer meter accuracy testing occurs</p> <p>Confirmed DVG: 3</p>

Audit Input	Confirmation of Input Derivation	Confirmation of DVG Assignment
<p>Systematic Data Handling Errors (SDHE)</p>	<p>Input Derivation: Computerized billing software and reporting is in place. In house audits of data occur monthly and a 3rd party auditor review takes place annually.</p> <p>Comments: Account management practices are reviewed annually by staff. Billing software automatically flags for zero, hi, and low usage. Reports and billing are processed monthly and internal audits of data are performed monthly. 3rd party audits are currently taking place annually.</p> <p>Confirmed input value: 8.324</p>	<p>If custom estimate provided – Default input utilized</p> <p>Characterization of read collection & billing process: Automated collection with computerized billing software and very limited manual reading</p> <ul style="list-style-type: none"> - 98.65% of meters – AMR - 1.35% of meters – Standard manual / handheld entry <p>Characterization of billing process and billing data auditing: In-house review of monthly reports generated by billing software occur monthly by staff and 3rd party annually.</p> <p>Confirmed DVG: 5</p>
<p>Length of Mains</p>	<p>Input Derivation: Historic data of pipeline installations, As-Built, iWater GIS database and Civiltec Hydraulic Model.</p> <p>Hydrant lateral length included: No</p> <p>Comments: Sunny Slope Water Co. utilizes a Hydraulic Model built by Civiltec Engineering as well as an iWater GIS system to manage detailed distribution system accuracy.</p> <p>Confirmed input value: 60 Miles</p>	<p>Mapping format: GIS, paper maps, and Hydraulic Model</p> <p>Asset management database: GIS can cover some asset management functions</p> <p>Map updates & field validation: Map updates take place following each project and are a combination of edits both in-house and outsourced engineering consultant - Civiltec</p> <p>Comments: Random field verification of map & GIS data does not occur</p> <p>Confirmed DVG: 7</p>
<p>Number of Active and Inactive Service Connections</p>	<p>Input Derivation: Billing software is used to query accurate record of accounts.</p> <p>Basis for database query: Account ID or service size</p> <p>Comments: Service area is effectively ‘built out’ with only small quantities of account activations or deactivations occurring annually. Provided reports total 6,325 Active services + 7 Inactive services. All provided meter counts within 1% margin of error.</p> <p>6,332 total services used for reporting – based on quarriable database and reports provided for this Audit Validation.</p> <p>Confirmed input value: 6,332</p>	<p>CIS updates & field validation: Accomplished through normal meter reading process & monthly billing</p> <p>Estimated error of total count within: Within 1%</p> <p>Comments: Standard policy practices and computerized accounting software produce highly consistent total service qty. Auditing of electronic records takes place by a 3rd party annually. Periodic field checks of service count are reported to occur annually</p> <p>Confirmed DVG: 9</p>

Audit Input	Confirmation of Input Derivation	Confirmation of DVG Assignment
<p>Average Length of Customer Service Line</p>	<p>Are customer meters at the curbstop? Yes</p> <p>Where are customer meters installed if not at curbstop? N/A</p> <p>Customer service line derivation</p> <p>Comments: Default input grade applied. Customer meters are typically located at the property boundary.</p> <p>Confirmed input value: YES</p>	<p>Comments: Default input grade applied. Customer meters are typically located at the property boundary.</p> <p>Confirmed DVG: 10</p>
<p>Average Operating Pressure</p>	<p>Number of zones, general setup: Sunny Slope consists of 3 independent pressure zones, separated by identified 'Down Valves'</p> <p>Typical pressure range: Zones 1: 45-74 psi. Zone 2: 60-78 psi. Zone 3: 55-90 psi.</p> <p>Input derivation: SCADA telemetry, facility elevations, field operator pressure test results, hydraulic model calculations</p> <p>Comments: Pressure zone integrity is tightly monitored and no valves are left in a position to breach pressure zones.</p> <p>Confirmed input value: 72.5 psi</p>	<p>Extent of static pressure data collection: SCADA records basic system pressures while pumps and wells are on or off, allowing static and dynamic pressures to be identified.</p> <p>Characterization of real-time pressure data collection: SCADA telemetry does not actively record distribution system pressures beyond pump stations</p> <p>Hydraulic model in place? Yes Calibrated?: 2013</p> <p>Comments: The hydraulic model was created for the Sunny Slope in 2013 and fully calibrated at that time. However, minor revisions have been documented as recently as the time of this Validation in CY2020</p> <p>Confirmed DVG: 5</p>
<p>Total Operating Cost (TOC)</p>	<p>Input Derivation: From internal budgeting reports (MAS90) and completed 2020 Annual Report – Page 14 of 26.</p> <p>Comments: Salaries, benefits, insurance, depreciation, & power costs all confirmed in review of provided Annual Report and staff csv files.</p> <p>Confirmed input value: \$4,918,723.00 / Year</p>	<p>Frequency of internal auditing: Periodically Performed by Sunny Slope Staff</p> <p>Frequency of third-party CPA auditing: Routine; Annually</p> <p>Comments: Well-structured cost accounting system is in place with internal review taking place monthly, and 3rd party audit of data occurring annually.</p> <p>Confirmed DVG: 10</p>

Audit Input	Confirmation of Input Derivation	Confirmation of DVG Assignment
<p>Customer Retail Unit Cost (CRUC)</p>	<p>Input Derivation: Sunny Slope Water 126th Annual Report - For the Year Ending December 31, 2020 – Page 14 of 26.</p> <p>Sewer Charges Volumetric? N/A</p> <p>Sewer Charges Included? N/A</p> <p>Comments: BMAC + BUUC = 3,338.834 AF divided into Sales Revenue of \$5,572,638.00</p> <p>Confirmed input value: \$3.83 / 100 Cubic Feet</p>	<p>Characterization of calculation: Calculation of sales revenue collected and metered volume. Input calculations have not been reviewed by an M36 water loss expert.</p> <p>Comments: Rate structure reviewed and updated costs implemented in 2014</p> <p>Confirmed DVG: 9</p>
<p>Variable Production Cost (VPC)</p>	<p>Supply profile: 100% of water supplied was produced by Sunny Slope own sources in CY 2019.</p> <p>Direct variable costs included: Pumped water, Treatment chemicals and Distribution power costs</p> <p>Secondary costs included: Expanded in CY2019 to include Insurance, Material wear & tear, etc. San Gabriel & Raymond Basin (source water supply) overhead costs and Depreciation are now accurately recorded and factored in to the Variable Production Cost as well.</p> <p>Comments: Cost accounting system in place with well trained staff administering and annual internal + annual 3rd party CPA audits.</p> <p>Confirmed input value: \$737.58 / AF</p>	<p>Characterization of calculation: Primary costs plus all pertinent secondary costs.</p> <p>Comments: Reporting table had to be modified to include addition of tracked secondary costs. Calculation</p> <p>Annual 3rd party audits are performed, but that process does not include an M36 water loss expert.</p> <p>Confirmed DVG: 7</p>
<p>Pending Items needed to complete the validation</p>	<p>None</p>	